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FUNDAMENTALS OF ITALIAN AGRICULTURE

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FUNDAMENTALS OF ITALIAN AGRICULTURE

By Victor B. Sullam*

Over an area somewhat smaller than that of California Italian agriculture assembles a variety of crops, farming methods, and economic and social problems that cannot be found anywhere else in the world. Farming in different parts of Italy resembles that of Southern France, the Netherlands, Switzerland, and Eastern Europe. Thus one can find in Italy examples of all the features and problems of Old World agriculture. These diversities in the agricultural pattern have influenced heavily the economic and political history of Italy. Current discussions of the future of Italy cannot ignore the regionalized nature of the country's agriculture.

Italy, long known to the Ancient World as the great producer of crops, is still predominantly an agricultural country. Nearly one-half of the gainfully employed population is engaged in agricultural pursuits, and some 19 million people, out of a total of 44 million inhabitants, depend upon the land for their livelihood. The relative importance of other economic activities varies from region to region, but, throughout Italy, farming is one of the main sources of employment and income. Thus the more industrialized regions of the North are also the most productive agricultural areas.

In few other western countries have demographic problems occupied such an important place as in Italy. Density of population and availability of resources need to be considered among the fundamentals of Italian agriculture. In recent years, overpopulation and land hunger unfortunately have been drawn upon to justify dreams of conquest and empire with the result that they have become issues better suited for balcony oratory and for propaganda than for the toil of the economist. Without engaging in discussions or speculations, a few facts that are of extreme significance for an understanding of the Italian agricultural economy can still be presented.

Italy has an area equal to that of Arizona (120,000 square miles) or to some three-fourths of that of California, which it resembles to a certain extent in variety of climates and in the wide range of agricultural enterprises. In density of population, Italy surpasses any State of the United States but with its 365 persons per square mile ranks well after the Netherlands, Belgium, and England.

Italy lacks the natural resources and the colonial empire that have undoubtedly contributed to the welfare of more densely populated or larger European countries. A reasonable assumption seems to be that wiser economic policies, more far-reaching reforms, and greater concentration upon peaceful undertakings could have partially offset the natural handicaps that have stood in the way of Italy's industrialization and economic progress. The fact remains that the number of people who, by lack of alternative employment opportunities or by their own inclination, are making a living from the soil is strikingly high in relation to the available resources. Land, rather than labor, is the limiting factor of agricultural production.

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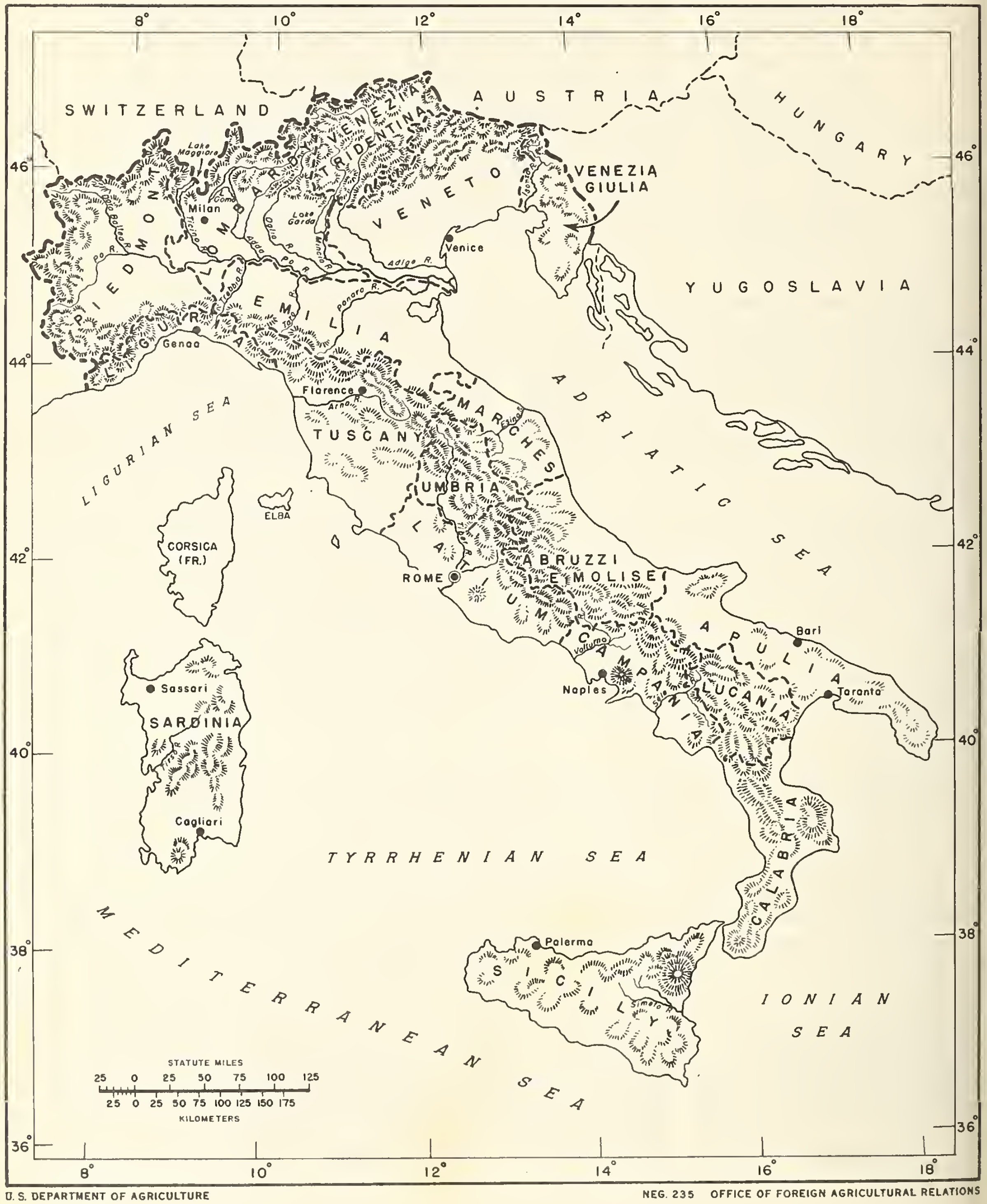

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FIGURE 1.-Map of Italy.

This circumstance has influenced to a greater or lesser extent all aspects of the agricultural economy, from farm practices to land-tenure arrangements, from agricultural research to land utilization. Accordingly, one can seldom apply to Italian agriculture principles and criteria that are sound in the United States or, for that matter, in any other new country where land is relatively plentiful and labor is the high-cost factor. Under these conditions, such basic concepts as "intensity of cultivation" or "efficiency of operations" acquire an entirely different meaning. Obvious as this fact may be, it is still worth repeating at a time when the force of events makes all features of Italian agriculture an issue of much interest to the American people.[1]

Because of the scarcity of land, no effort has been spared in Italy to increase the productivity of the soil. Drainage and reclamation of swamps, terracing of hills, construction of dams and canals for irrigation, in short all the activities that go under the untranslatable term of "bonifica,"[2] have at all times been the main concern of the Italian farmer. From the Etruscan reclamations of Tuscany to the irrigation canals built by the Cartusians in the fourteenth century, from the draining of Lake Fucino by Claudius to the projects undertaken by Napoleon in Emilia, the idea of conquering new land for agriculture is forever present and finds its greatest expression in the private and public undertakings which, since 1870, have greatly enhanced the productivity of over one-sixth of the total area of the Kingdom.[3]

Nowadays, farm and forest enterprises cover 92 percent of the total area, namely, all the land that can be made to yield even a mere subsistence return (see table 1). Though 79 percent of the country is hilly or mountainous,[4] about 50 percent of the productive area is worked with the plow and the spade, and 40 percent is in pastures, woods, and forests.

A great variety of natural conditions makes possible the production of an unusually wide range of crops. Among the field crops, wheat is first and foremost, although Italy's environment is not favorable for this enterprise.[5] Wheat occupies over 17 percent of the area in farm and forest and over 39 percent of the tillable land (see table 2), disappearing from the rotation only in 10 out of 704 type-of-farming areas. With the somewhat less widespread vine, wheat forms the cornerstone of Italian agriculture.[6] Except for these two enterprises the geographical variations in field and tree crops are marked. Rye and buckwheat are grown in the North. Rice is a staple crop in many parts of the Po Valley. Silkworms are an important source of income in the Northeast. Chestnuts are grown on an extensive scale in the western Alps and the Tuscan Apennines. Citrus fruits, almonds, pistachio nuts, carob beans, sumach, and cotton are important crops in the South and in Sicily. The lower part of the Po Valley owes much of its wealth to the sugar beet, whereas the sturdy olive defies both the droughts of the South and, in a few favored spots, the rigors of northern winters.

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[1] Italian agricultural economists have long emphasized the inadequacy of the "intensity" concept. As defined by BRINKMANN (ECONOMICS OF THE FARM BUSINESS, Berkeley, 1935), intensity (Betriebsintensität) means high input of factors of production per unit of area. By this standard both a Sicilian orchard, with low inputs of operating capital and high inputs of labor (1,300 hours per acre), and a Lombard farm, with high inputs of livestock and machinery and low inputs of labor (400 hours per acre), are "intensive" farms. Italian sources usually distinguish between "active" farming (high input of labor) and "intensive" farming (high inputs of operating capital).

While some doubt exists as to whether any such concept is truly useful, there seems to be a need for a revision of the terminology, especially where comparisons are made between and among different types of agriculture. By American standards even the *latifundia*, which employ 10 man-hours per acre, are areas of intensive farming.

[2] From the Latin *bonum facere*, meaning to make good (productive), comes this term which currently translated as "land reclamation," actually embraces also soil conservation, irrigation, reforestation, etc.

[3] A few specific instances of the importance of the emphasis on soil improvement may be mentioned: (1) Italian legislation still provides for land-tenure contracts of the emphyteutic type; namely, contracts under which the occupier is bound to improve the land. (2) In farm-management research, the bulk of the work consists in analyses of land-reclamation and soil-conservation projects; hence a rather dynamic approach to farm management problems that has great interest also from a purely theoretic viewpoint. (3) In agronomy, the elimination of physical or chemical obstacles to agricultural production is the main subject taught in institutions of higher learning.

[4] On December 31, 1938, 38.6 percent of the total area was classified as "mountain," with hills and plains occupying 40.5 and 20.9 percent, respectively. Similar percentages apply to the productive area.

[5] This fact is carefully emphasized even in official Fascist publications.

TABLE 1.-*Land utilization and labor inputs in Italy, 1931*

ITEM	AREA	PERCENTAGE OF PRODUCTIVE LAND	LABOR INPUTS[1] (MAN-HOURS PER YEAR)	PERCENTAGE OF TOTAL INPUT
	1,000 acres	*Percent*	*Millions*	*Percent*
Tillable land	31,512	44.7	4,013	52.9
Pastures and meadows	14,867	21.1	763	10.1
Orchards and vineyards	5,634	8.0	2,590	34.1
Woods and forests	13,747	19.5	223	2.9
Productive but uncultivated land	4,758	6.7	(2)	(2)
Total	70,518	100.0	7,589	100.0

[1] Does not include the labor supplied by women and children and labor inputs for animal husbandry and processing of farm produce.

[2] Included in pastures and meadows.

Compiled from official statistics and IL LAVORO NELL'AZIENDA AGRICOLA CORPORATIVA, by FRANCO ANGELINI, Rome, 1935, by the Office of Foreign Agricultural Relations.

In general, crops which, with heavy application of labor, yield the greatest return per unit of land appear to assume places of prominence. Such are the trees and the vine, which are also important because they may be grown on any narrow strip of land, along roads and ditches, or on rugged hillsides and mountain slopes. Such likewise are the intertilled crops, because patient shaping, leveling, and ridging of fields, as well as careful cultivation, can be made to compensate for a none-too-favorable climate.[7]

The over-all intensity of farming is evinced by many peculiar features of the farm enterprise. Neither wood lots nor pastures are common on Italian farms. Instead the peasant obtains his firewood from a few trees interspersed on the fields. The livestock is fed from meadows in rotation, from cover crops, and from the byproducts of other enterprises. Part of the land is cropped twice, corn, rice, cover crops, and vegetables often following wheat.

The small size of holdings, high degree of diversification, combination of tree and field crops, and topography are all factors contributing to the low degree of mechanization of Italian agriculture. Motors comprise about one-third of the total

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[6] The diffusion of wheat on all farms and in all sections of Italy needs to be taken into account in discussing the "Battle of Wheat," which may be considered as a "blanket" program of agricultural expansion hinged upon the most common crop.

[7] The establishment of arboreal and intertilled crops represents the final goal of all reclamation and resettlement projects, both in Italy and in the Italian colonies.

TABLE 2.-*Utilization of tillable land in Italy, 1938*

CROP	AREA	PERCENTAGE OF TILLABLE LAND	CROP	AREA	PERCENTAGE OF TILLABLE LAND
	1,000 acres	*Percent*		*1,000 acres*	*Percent*
Cereals:			Potatoes and other vegetables:		
Wheat, spelt, and maslin . .	12,416	39.2	Pulses	3,379	10.7
Corn	3,296	10.4	Potatoes	1,053	3.3
Oats	1,107	3.5	Beans & peas, fresh	216	0.7
Barley	492	1.5	Tomatoes	142	0.4
Rice	367	1.2	Cabbage	107	0.3
Rye	257	0.8	Other truck crops	191	0.6
Total	17,945	56.6	Total	5,088	16.0
Industrial crops:					
Sugar beets . .	336	1.1			
Hemp	224	0.7	Meadows in rotation and cover crops .	7,877	24.9
Flax	44	0.1			
Cotton	91	0.3			
Tobacco	81	0.3			
Total	776	2.5	Total tillable land	31,686	100.0

Compiled from official statistics by the Office of Foreign Agricultural Relations.

supply of power (see table 3). In terms of performance, however, livestock contributes 87 percent of all the work.

The utilization of internal-combustion engines is low, a circumstance which Vitali attributes in part to the poor adaptability of motors to the variety of operations performed on farms and, to a greater extent, to poor organization of farm operations, which is in turn connected with the small size of holdings (*12*).[8]

TABLE 3.-*Distribution of farm power in Italy, 1938*

SOURCE OF POWER	NUMBER	POWER AVAILABLE			WORK PER ANNUM			UTILIZATION
		TOTAL POWER	PERCENTAGE OF ANIMAL POWER	PERCENTAGE OF TOTAL POWER	TOTAL WORK	PERCENTAGE OF ANIMAL WORK	PERCENTAGE OF TOTAL WORK	HOURS PER ANNUM
		1,000 KW	*Percent*	*Percent*	*1,000 KWH*	*Percent*	*Percent*	*Number*
Draft animals:								
Cattle	2,224,000	1,637	70.5	46.4	2,455,296	70.5	61.4	1,500
Horses	518,000	381	16.4	10.8	571,872	16.4	14.4	1,500
Mules	302,000	166	7.1	4.7	249,150	7.1	6.2	1,500
Asses	557,000	139	6.0	3.9	208,875	6.0	5.2	1,500
Total	3,601,000	2,323	100.0	65.8	3,485,193	100.0	87.2	
			PERCENTAGE OF MECH. POWER			PERCENTAGE OF MECH. POWER		
Motors:								
Steam engines .	13,226	156	13.0	4.4	50,473	9.9	1.3	324
Tractors	36,964	684	56.8	19.4	230,000	45.0	5.8	336
Other IC engines	27,132	108	9.0	3.1	44,147	8.6	1.1	407
IC pump motors .	321	51	4.2	1.4	48,676	9.5	1.2	960
Electric engines	44,426	204	17.0	5.9	137,934	27.0	3.4	675
Total	122,069	1,203	100.0	34.2	511,230	100.0	12.8	
Grand Total .	3,723,069	3,526	–	100.0	3,996,423	–	100.0	

Estimates by the Office of Foreign Agricultural Relations based on livestock and machinery censuses and data covering fuel consumption.

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[8] Italic numbers in parentheses refer to Literature Cited, page 288.

Among the various sources of power, cattle (72.2 percent cows and the remainder oxen and bullocks) rank first and foremost. This is to be ascribed to both mechanical and economic considerations. The rugged topography and the compactness of soils necessitate a source of power both elastic and adaptable. To this end cattle are better suited than horses, which require regularity of work and stability of effort. In southern Italy and on the islands, however, horses, mules, and asses are the main draft animals.

From an economic standpoint cattle are generally preferred because they can better utilize the low-grade roughage that comprises much of the feed supply on individual farms. In addition they can be utilized for purposes other than mere work. Consequently, most Italian cattle are multiple-purpose animals of native breeds, slightly improved by selection. Beef cattle as such are practically unknown except for some breeding stock used for the production of rapid-gain calves and steers. Dairy cattle, belonging mostly to the Brown Swiss and Holstein breeds, are raised in the North and around urban centers.

Altogether the draft animals of Italy require some 15 million tons of hay per year. This represents over half the total feed production of the country.

Sheep and goats, although found everywhere in Italy, assume greatest economic importance south of the Po Valley. Hogs and poultry are raised mostly in household enterprises; large-scale production obtains only in the North.

TABLE 4.-*Livestock numbers in Italy, specified years*

TYPE	1908[1]	1930	1936	1938
	Number	*Number*	*Number*	*Number*
Horses	909,490	942,475	816,270	791,120
Mules	386,720	465,898	421,820	431,150
Asses	848,574	904,625	805,310	796,390
Cattle	6,211,607	7,088,752	7,235,000	[2]7,666,890
Buffaloes	19,185	15,014	(3)	(3)
Sheep	11,157,423	10,268,119	8,862,470	9,467,400
Goats	2,734,828	1,892,736	1,794,630	1,828,070
Swine	2,507,964	3,318,075	3,205,690	2,940,000

[1] Does not include the territories then under Austrian rule.

[2] Of which 3,466,450 cows produce milk over and above the needs of the calf. These include over 1,000,000 Brown Swiss and 65,000 Holsteins.

[3] Not known.

Compiled from official statistics by the Office of Foreign Agricultural Relations.

The livestock population of Italy has undergone significant changes in the last 40 years. (See table 4.) Mechanization has taken place at a rapid pace, motors for plowing having increased from 200 steam tractors in 1917 to some 36,000 internal-combustion tractors in 1937. Horses, mules, and asses have shown the greatest decline; cattle numbers have remained fairly stable. Among the smaller species the decline in sheep numbers is to be ascribed to land reclamation and intensification of agriculture, which deprived the migratory flocks of their winter pastures. The decline in goats is connected with fiscal policies and restrictions on the grazing of forested land. Encouragement of wool production and abolition of the tax on goats are responsible for the 1938 recovery.

PHYSICAL ENVIRONMENT

A variety of climate, soils, and topography together with historical developments and institutional factors have given Italy an exceptionally diversified agricultural economy. This diversification is clearly indicated in official statistics; an attempt to divide the Kingdom into agricultural zones, or "groups of townships (communes) presenting analogous agricultural and natural conditions," has led to the establishment of 704 zones. The agricultural zones have been long known to be far from homogeneous, and recent changes in types of crops and farming practices have made this classification even less satisfactory, so that now a greater number of zones should be established. A generalizing discussion of type-of-farming areas is therefore obviously impossible. Even a regional treatment appears difficult, because uniform conditions seldom obtain over wide areas.[9]

A brief survey of Italian agriculture necessitates first of all a consideration of the physical and social setting, which will throw much light upon the regional features.

Topography

The mountains, comprising some 39 percent of the total land, include the Alpine Ranges and the Apennines. The former stretch in a towering wall from the Gulf of Genoa in the west to the Gulf of Carnaro in the east, forming the northern boundary of the country. Smaller ranges of mountains (Pre-Alps) and hills are festooned between the Alps and the plains. The rugged and bleak Apennines form the backbone of the peninsula, at times stretching toward the sea, at times receding from the seashore to leave some tableland (as in Apulia) or some plains. Lofty mountains and highlands form the core of Sicily and Sardinia.

The hills vary greatly in origin, nature, and fertility. In the North they are mostly formed from moraine deposits, whereas in Central and Southern Italy they are mostly volcanic or cores of ancient mountains.

The plains of the Po, "declining gently from Vercelli to Marcabò," make up much of Northern Italy. Once a great gulf of the Adriatic Sea, the plain has now been filled by the Po River and its tributaries and is Italy's most important region. Up to Mantua the Po forms Italy's main waterway. In other parts of Italy other rivers have formed agriculturally important plains; such are the plains of the Adige, Arno, Tiber, Esino, Volturno, and Sele. Elsewhere in Italy plains are lacking in water, a circumstance which limits the productivity of the plain of Foggia (Apulia) and of the Campidani of Sardinia.

Climate

The lofty Alpine Range affords protection to Italy from the climatic extremes of continental Europe. The Apennines crossing the peninsula slantwise affect precipitation, which is higher on the western than on the eastern slopes. Most of the narrow peninsula and the isles, however, feel the effect of the warm Mediterranean.

[9] The high degree of diversification explains the reluctance of experts on Italian agriculture to formulate those statements and supply that general information which are often used in connection with the agriculture of any country. Thus persons thoroughly acquainted with the agricultural economy of Italy are loath to speak of "average size of farm," "efficiency of operations," "degree of technological advancement," "degree of mechanization," etc., for any statement on these subjects would have to be accompanied by a number of reservations and qualifications.

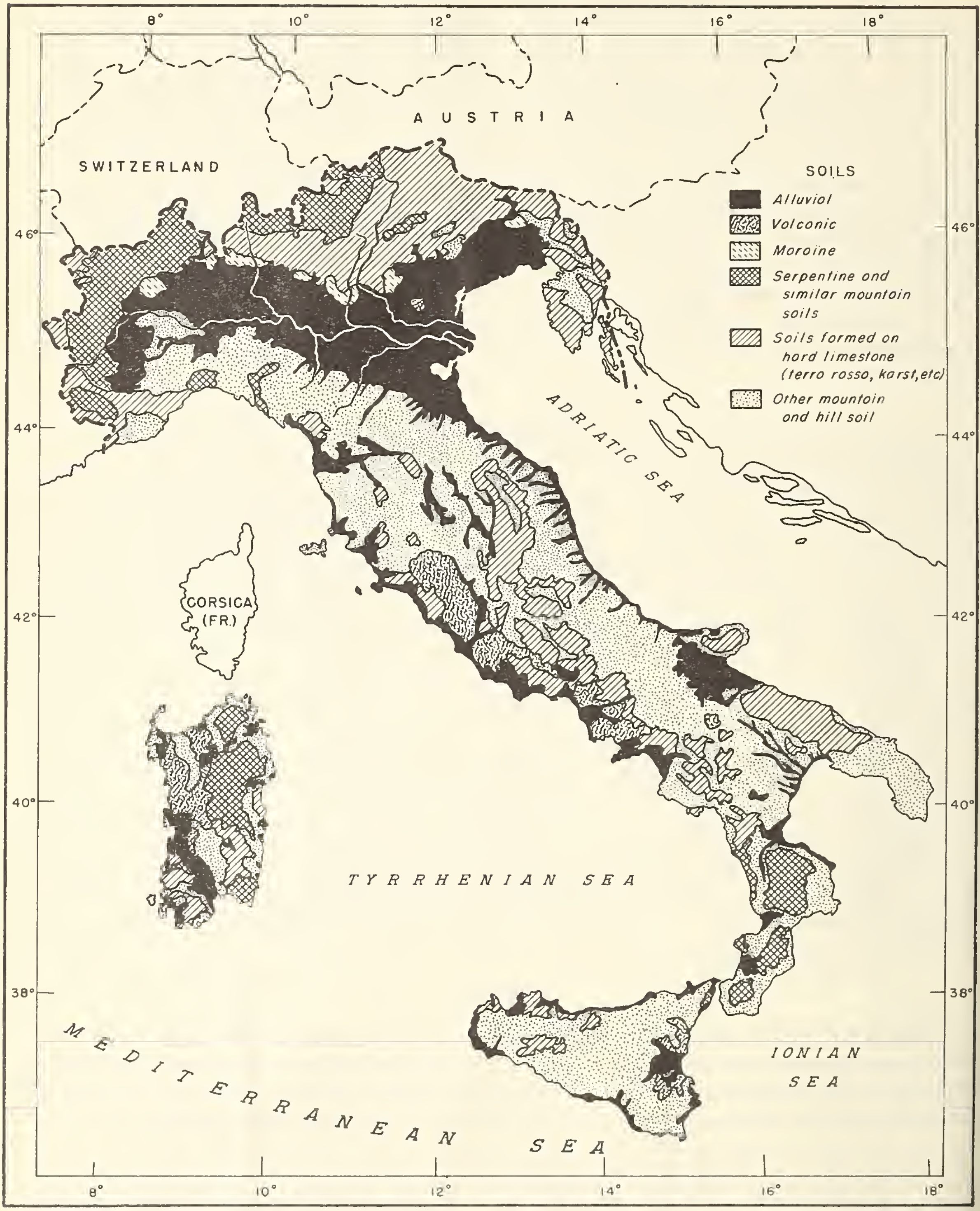

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FIGURE 2.-Soil Map of Italy.

The climate of the Po Valley represents a transition from continental Europe to the Mediterranean. It is characterized by cold winters[10] (mean winter temperatures in Alessandria and Milan average 34° and 36° F., respectively) and by summers as hot as those of Sicily. The cold damp air from the mountain valleys frequently covers the flat areas, whereas the temperature is higher on hillsides. In the well-sheltered areas around the Alpine lakes, which have milder winters, lemon groves and olive trees thrive.

The rainfall is about 30 inches a year over the plain and about 40 inches in the Pre-Alps. Annual precipitation is distributed rather evenly, but the summer half year has more rain than the winter half. The rainiest months are May or June and October, the driest January and February.

The northern Apennines and the Tuscan hills have cooler summers than the Po Valley. Rainfall is higher in the winter months, reaching peaks in April and October, with a minimum of 1 inch in July.

Liguria and the western part of Central and Southern Italy down to Naples have a climate similar to that of the French Riviera, with mild winters and relatively cool summers. Thus Liguria has a mean January temperature of 45° F., that is, only 5° F. less than Algiers, which lies 500 miles to the south. Rainfall varies from 52 inches in the Genoa watershed to 33 inches around Naples. Minimum rainfall occurs in July, whereas peaks appear between October and November.

Southern Italy and the islands have very dry, hot summers, and their total rainfall never exceeds 30 inches. Precipitation reaches a peak in December and a minimum in July or August.

So sharp are the differences in climate between these areas and the Po Valley that for many crops there is a complete inversion in the vegetation cycle. Thus in the North alfalfa is cut in the summer and grazed in the winter, but the opposite is true in Sicily. Apulian fodder beets are harvested in the spring, that is, at the very time when the planting season begins on northern farms. On the whole the winter is a time of feed shortages in the Po Valley and of relative abundance in the South. Summer brings short rations to southern herds and abundant forage to northern cattle.

Soils

Prairie and Chernozem soils, the best soils of the Temperate Zone, are not to be found in Italy. The "black" soils occasionally mentioned by Italian authors are light acid soils (pH = 5.1 ÷ 5.8) with a high content of organic nitrogen (up to 2 percent) and P_2O_5 (.2 ÷ .3 percent) seldom available as plant food (*10*).

The best soils of Italy are volcanic. They are found in many parts of Latium, Campania, Sicily, and Sardinia and in a few localities of Lucania and Veneto. These soils are usually low in nitrogen and rich in mineral plant foods. Old volcanic soils need neither potash nor phosphorus; those that have been cultivated in recent years only often receive heavy applications of superphosphate.

Volcanic soils are usually planted in crops that yield high returns per unit of area, such as citrus, vines, and vegetables. On the volcanic soils of the Roman Campagna, intensive dairy farming is practiced.

Italian sources often distinguish between acid and alkaline volcanic soils, but the distinction has little significance from an agronomic standpoint, because the

[10] "Piacenza has the same mean January temperature as Berlin and a far lower one than Skomvaer in the south of the Lofoten Islands" (*5*, p. 288).

comparatively low calcium content of the acid soils is easily remedied by light applications of lime (*10*, p. 10).

Alluvia rank second best among the Italian soils. They are mostly found in the Po Valley and in the watersheds of a few rivers of the peninsula and the islands. They appear in only a few places that are over 1,500 feet above sea level, such as in the Piedmont, in the former basin of Lake Fucino, and in Umbria. Generally speaking, they are characterized by a high content of calcareous material (averaging from 15 to 25 percent) and a subalkaline reaction (pH from 7.8 to 8.1). Alluvia have a fairly high content of plant nutrients (N = 2 percent, K_2O = .5 percent, P_2O_5 = .15). Heavy applications of fertilizer and irrigation make them highly productive. They are usually utilized for industrial crops and meadows.

Upper Lombardy and eastern Piedmont have large areas of acid heath soils with pH ranging from 5.1 to 6. These soils are low in readily available nutrients. The acid areas are the main production centers for rice. The stonier but less acid (pH 6.1) soils of the Province of Milan are planted in rye and fruit trees.

Along the seashores, alluvia are modified by peat and by marine materials. Peat soils, which are common in lower Emilia and in the Pontine Ager, are extremely acid (pH = 5) and, although rich in total phosphorus and nitrogen, contain but little available plant food. Marine materials make the alluvia of northern Veneto highly alkaline and generally poor. The planting of irrigated crops (especially rice), however, makes soil improvement easy and economically profitable.

The soils formed on soft limestone comprise the well-known Terra Rossa as well as its eroded (Karst) or otherwise modified forms (*terra rosso-bruna*). These soils are characterized by an accumulation of sesquioxides and silica. They are low in humus and in minerals. Under 1,500 feet of altitude field and tree crops are usually cultivated in them. Above 1,500 feet forestry appears the most profitable undertaking, but above 3,600 feet pastures are necessary to control erosion.

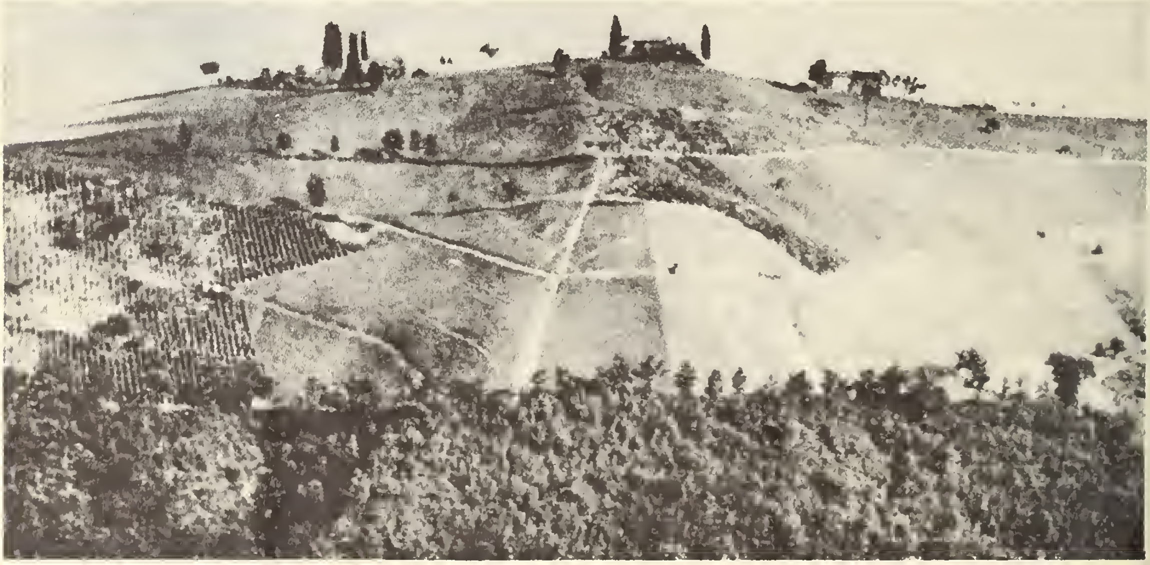

FIGURE 3.—Soil conservation on the Tuscan hills.

Serpentine and similar poor soils are found along the Alpine Range in Calabria and in western Sardinia. The serpentines of the Alps are practically barren, as witnessed by the toponymy of serpentine areas (bald mountain, mounts of death, etc.). The bare rocks that surround Genoa have been terraced and covered with more productive soil, which the peasants carted and carried from the plains below.

The skeletal soils of Calabria and Sardinia are covered by forests. Beech and pine trees predominate in Calabria, whereas cork oaks are the main species of Sardinia.

A variety of soils, formed mostly on soft limestone, are found along the Apennine Range, in some of the Apennine watersheds, and in southern Sicily for a total area of 14 million acres. Gully erosion in these areas has some imposing aspects, especially in the so-called *calanchi* of Volterra and in the clay soils of Siena. On the whole, gully erosion makes some 600,000 acres unfit for any exploitation.

The structure of these soils varies from clay to loamy, and they have a slight or marked alkaline reaction. Some of them, such as those of southern Sicily, are high in sodium chloride, so that heavy applications of lime are the first step in their reclamation (*10*, p. 8). Cultivation is usually so planned that the soil is enriched with organic matters. These soils are generally low in readily available phosphorus (20 to 40 pounds per acre), although potash is present in more than adequate quantities.[11]

Moraine soils, such as are found in many Alpine valleys, need be mentioned independently of the mountain soils, from which they are derived, for socioeconomic rather than agronomic reasons. The structure of these soils varies within a small area from stony to sandy, depending on whether they were formed from frontal or from internal moraines. Accordingly, a sufficiently diversified farm must have soils of different types. Thus do farm units tend to be ribbon-shaped and at times comprise scattered tracts.

SOCIAL ENVIRONMENT

Forms of land tenure and organization of the production unit, although quite different in different parts of Italy, exhibit on the whole a few general features that need to be emphasized because they contrast sharply with those of the United States.

Farms, in the American meaning of the word, are none too common in Italy and are never reported as such in the statistics. Statistical sources are based on the rolls of the Tax Registry (*Catasto*) and, as such, merely consider the operating unit (*azienda*). More precisely, Italian statistics (*4*, pp. 12; 174-5) list as an operating unit –

> any area of land used in flower, truck, agricultural and forest production, barring only noncommercial gardens in cities of over 15,000 inhabitants . . .
>
> *
>
> When several tracts of land, although at some distance between and among themselves, have one operator, who exploits them as if they were a compact body of land . . . such tracts constitute but one *azienda* [operating unit] . . .

Since no minimum size is required for the listing of land as an "operating unit," Italian statistics include a large number of holdings (in fact 35.5 percent of the total) of less than 3 acres in size, which would not be considered in the United

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[11] The treatment of these soils in Italian sources is cumbersome and difficult. From an agronomic standpoint, there seems to be little need for distinctions that are of interest only to the pedologists. For soil-conservation work, Oliva (*7*, p. 173) emphasizes the fact that "there is not one type of hill clay but an imposing array of types that differ in form, nature and composition."

States Census. Conversely, American statistics report as a separate farm "the land operated by each cropper and the land operated by the owner or manager by means of wage hands," whereas in Italy "croppers" are not considered as operators, and all the plots of an estate that are operated by them are reported as a single operating unit.

Under these circumstances one must distinguish between an "operating unit," land operated in one enterprise, and a "holding," land held by one individual.

The phenomenon of operating units consisting of separate tracts, commonly referred to as "dispersion," occurs frequently throughout Italy. In the Province of Aosta a "farm" of 55 acres is made up of 315 separate tracts. In Umbria there is a "farm" divided in 12 widely scattered tracts located in three different townships. In the commune of Ferranchina (Lucania) a farm of 5.5 acres comprised 7 tracts.

Excessive fragmentation of the holdings, or "pulverization," often attends dispersion. Pulverization reaches an extreme at Arvier (Aosta), where less than 3 acres in garden land were divided among 1,000 owners. At Gorga (Marche) the average tract is 0.2 acre in size. In Sicily 1,500 acres of land were divided among 3,600 owners. In many areas of Sardinia holdings of less than 2.5 acres comprise 65 percent of the total area of a township.

Both dispersion and pulverization are typical of the mountains, where they had their origin in the distant past.[12] In the Plains of Sardinia and Friuli, ill-advised alienation of the public domain, followed by subdivision of estates, has brought the phenomenon of pulverization to pathological extremes.

Where holdings are larger than the operating units or where land is owned by juridical rather than physical persons, land, management, and labor are separate contributions of different groups. In other words, a middleman - entrepreneur - is interposed between landlord and peasants.

Crop-sharing agreements ranging from share tenancy (a contract resembling partnership) to pure sharecropping contracts have long been common in Italy, where they probably originated as a *modus vivendi* between the Latin peasant and the German or Lombard conquerors. In many sections of the peninsula, stability of tenure, paternalism of landlords, and many unusually favorable circumstances have contributed to give the share tenants a degree of prosperity.

With the advent of Fascism no effort was spared to substitute crop-sharing agreements, or at least wages in kind, for any cash reward to laborers. This was heralded as a great improvement, advantageous both to the workers and to management.

At present one needs to distinguish between share tenants, the farmers who, with their families, cultivate a small self-contained unit, and sharecroppers, the laborers who work a particular plot of land and are rewarded with part of the crop. In both cases expenses and returns are shared on a uniform basis. Sharecroppers may enter agreements for one crop only (*partitanza*) or for all cash crops (*compartecipazione*). The latter usually have greater stability and security of tenure.[13]

From what has been said above, it should be evident that but little significance is to be attached to statistical data pertaining to size of farm units or to tenure groups in Italy. A few data (see tables 5 and 6) serve as a general summary.

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[12] Dispersion has been occasionally reported in our Appalachian Mountains. The case of farmers owning a few acres of bottomland together with hillside fields is not too rare in Alamance County, North Carolina.

[13] Examples of stability of tenure on Italian farms, as given by Paul V. Maris (*6*, p. 903) are actually cases of share tenancy and not of cash tenancy.

TABLE 5.-*Occupational status of the gainfully employed in agriculture in Italy, 1936*

CLASS	NUMBER
Noncultivating managers:	
Landlords	167,879
Other landholders[1]	16,092
Capitalistic renters	48,386
Operators of mixed status[2]	20,676
Total	253,033
Cultivating managers:	
Small owners	2,704,769
Small landholders[1]	50,195
Cultivators of mixed status[2]	689,263
Small tenants	748,433
Total	4,192,660
Share tenants and métayers	1,787,601
Part-time operators	138,877
Technical personnel	17,388
Clerical personnel	4,022
Sharecroppers	141,377
Day laborers	1,817,283
Permanent laborers	381,785
Craftsmen	16,073
Of uncertain status	5,965
Grand total	8,756,064

[1] Holding land in usufruct or emphyteusis.

[2] Holding land under several titles (fee simple, tolerated possession, etc.)

Compiled from official statistics by the Office of Foreign Agricultural Relations.

TABLE 6.-*Pattern of land tenure in Italy, 1930*

STATUS OF OCCUPIER	FARMS	PERCENTAGE OF TOTAL FARMS	AREA	PERCENTAGE OF TOTAL AREA
	Number	*Percent*	*1,000 acres*	*Percent*
Owner	2,478,412	59.1	37,273	57.5
Tenant	565,770	13.5	8,248	12.7
Share tenant and métayer	530,626	12.6	10,271	15.8
Mixed[1]	621,458	14.8	9,074	14.0
Total	4,196,266	100.0	64,866	100.0

[1] Farm units, tracts of which are operated under different arrangements.

Compiled from official statistics by the Office of Foreign Agricultural Relations.

AGRICULTURAL REGIONS

The diversified natural setting already considered, together with historical developments and institutional factors, largely explains the multifarious aspects of Italian agriculture, which, as has been said, partakes in different places of the features of Swiss, Netherland, French, and Eastern European farming.[14]

The Alps

Throughout the Alpine Range, the ancient forms of communal ownership persist as integral parts of the economy. Private ownership is confined to the tillable land and the meadows that surround the small villages. The peasant spends only a part of the year in the valley cultivating his fields in a rotation of potatoes (or corn) and wheat. Barley, rye, oats, and occasionally buckwheat take the place of wheat, especially on poorer soils. Tree crops usually have little importance, but in a few of the more favored spots specialty crops are the main produce. Such are vegetables, flowers, and fruits in Liguria and deciduous fruits in Venezia Tridentina.

[14] HOBSON, ASHER. THE AGRICULTURAL SURVEY OF EUROPE: ITALY. U. S. Dept. Agr. FS Rept. 35, 93 pp., illus. 1926. [Mimeographed] See p. 8.

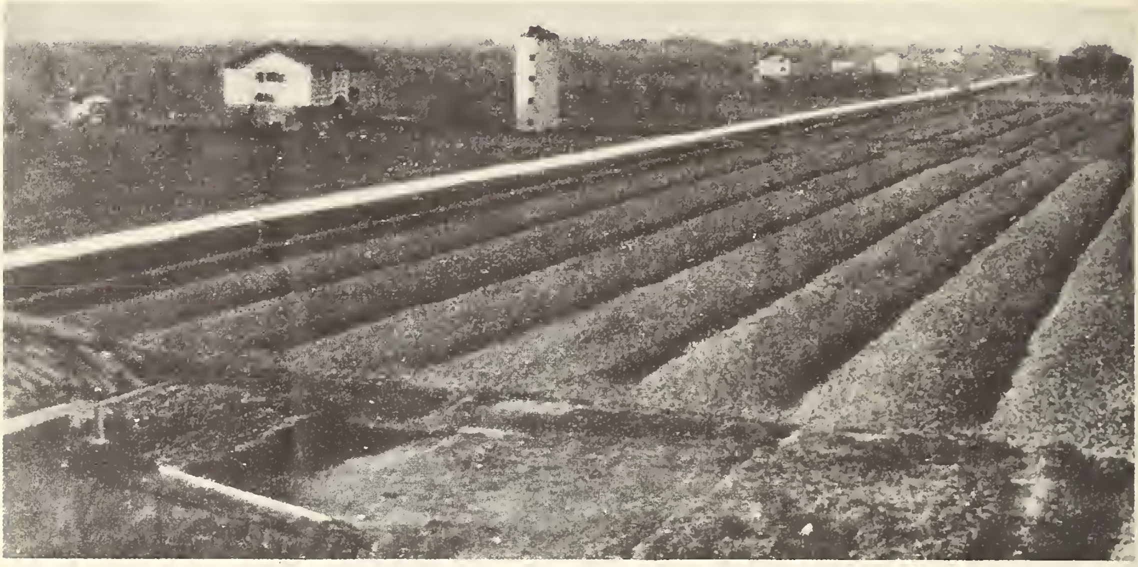

FIGURE 4.-The Po Valley owes much of its wealth to irrigation.

Combined with the field enterprises are livestock raising and forest exploitation. Dairy cattle of the Brown Swiss or Simmenthal type constitute the main source of income, most of the milk being processed into cheese and butter in community or cooperative dairies.

Sheep and goats are of little importance, except in certain valleys of Lombardy and Piedmont, which are the main centers of production for high-quality wool. Oxen, cows, and mules are the main sources of draft power.

All livestock enterprises are essentially migratory. The herds feed on hay from the village meadows throughout the winter and in the spring are driven up the mountain slopes to the communal pastures. There the men of the villages take turns in caring for the herd and in processing the milk. Late in the fall the herds are driven back to the valleys. While on the mountains, the villagers fell trees for the communal sawmills and gather faggots of firewood for their own consumption.

Nothing is more deceiving to the superficial observer than the economy of the mountains. The very feature that once made for conservation of natural resources and for economic stability, namely, the communal ownership of forests and pastures, has, in recent years, become a hindrance to better management and improvement. The attachment to the community was weakened by increasing contacts with the outside world, and the meager produce of the fields, little enhanced by modern techniques, became less and less adequate for the needs of the increasing population. Part and parcel of the mountain economy were the small industries and crafts. Nail making, wood carving, and weaving made substantial contributions to the peasants' income.

In addition, seasonal migrations both to the plains and to foreign countries enabled the mountaineers to find employment in slack periods.

Development of large-scale standardized production resulted in the disappearance of artisan shops, and changed market conditions for cheese and lumber products further reduced farm income. Consequently, the mountain districts have, in recent years, suffered acute economic maladjustment resulting in extensive migrations to the agricultural areas of the plains and to the cities.

The Apennines

In the Apennines, forms of land tenure are similar to those of the Alps, but communal property has survived to a lesser extent than in the Alpine region. Too often both pasture and forest land have been allotted to peasant families in units that have been too small for good management. On the whole, deforestation and overloading of pastures have played havoc with the economy of the area.

As one moves south along the Apennine Range, pastures become scantier, and the proportion of arable land increases. Wheat, horse beans, and potatoes are the main field crops, with chickpeas, grass peas, and vetch assuming some importance in special areas. Sheep and goats form the bulk of the livestock population. The flocks graze the mountain slopes during the summer and spend the winter in the plains of Apulia, Latium, and Tuscany. The flocks travel on special right-of-ways called *tratturi*, which are owned by the State.[15]

The Pre-Alps and the Upper Part of the Po Valley

This region comprises the hills and upper valleys between the Dora Baltea and the Isonzo Rivers. Once characterized by large estates, the land-tenure pattern is now one of small holdings, many of which came into existence in the early twenties. Both dispersion[16] and pulverization of peasant holdings are common. Somewhat larger, and yet dispersed, units are operated by share tenants.

The pattern of rural settlement consists of small villages and agglomerations of farmhouses centering around a common yard. The latter are clearly a left-over of the Roman type of settlement known as *curtis*.[17]

Fields, meadows, and pastures are spread around the village or the cluster of dwellings. Corn or potatoes alternate with wheat (or rye on more acid soils) in a much-too-short rotation, which is difficult to improve in view of the need for cash crops. Interplanting of corn with kidney beans or other legumes is a common practice.

Feed is obtained from meadows, cover crops, clover, and corn stovers. The quality of livestock, especially cattle, is poor and livestock numbers are, by Italian standards, quite low (1 head of cattle every 2 acres).

Long rows of mulberries border the fields, yielding leaves for silkworm culture, which provides employment for women and children and was once the main source of income for the peasants of this area.[18] Primary processing of cocoons is usually a cooperative undertaking.

[15] The right-of-ways occupy a total area of 49,198 acres in Southern Italy and 111,195 acres in Sicily.

[16] The variety of moraine soils, ranging from gravelly to loamy within a small area, at times makes dispersion a prerequisite for diversification of the farm enterprise.

[17] Similar patterns of settlement have been adopted in Italian colonization projects in Ethiopia.

[18] Farms in the Pre-Alps were often appraised on the basis of their output of silk cocoons.

On the hills of Piedmont vines are grown on a large scale. Much of the wine produced by modern plants, such as Barbera, Barolo, and Grignolino, is of high quality and world-wide renown. The town of Asti is the production center of the sparkling wines.

The Irrigated Section of the Po Valley

The northern section of the Po Valley, between the Pre-Alps and the left bank of the Po River, is the most important agricultural region of Italy. In this area, comprising some 2.5 million acres, farming is said to be on a par with "that of the most progressive countries of Northern Europe."[19]

This plain, once occupied by sandy dunes and swamps, was leveled and reclaimed through centuries of toil and now has one of the most complete systems of irrigation of the modern world. The great rivers, fed by Alpine glaciers, are harnessed and connected with a complex network of canals, some dating as far back as the thirteenth century and others built in the period of industrial and agricultural expansion that attended and followed the unification of the Kingdom.

Large-scale enterprises predominate, with holdings ranging from 40 to 200 hectares (about 99 to 494 acres). The land, often owned by corporations and charitable institutions, is farmed out for long terms to capitalistic renters, who contribute the operating capital and the management. The laborers, hired on an annual or monthly basis, sometimes make crop-sharing agreements for produce (corn, rice) that are consumed by the workers' families. Casual laborers comprise only one-third of the total labor force.

It must be emphasized that the renters of this section are not mere usurious middlemen but instead make essential contributions to the enterprise. Imports of operating capital are extremely high, often surpassing the value of the land. Long-term leases and special arrangements made to compensate for unexhausted improvements and good husbandry practices have led to excellent management of resources.

Small holdings are rare and obtain only near rural villages in the less fertile areas.

Among the farm enterprises, rice ranks first on the farms between the Dora Baltea and Adda Rivers, where it occupies as much as three-fifths of the land. Between Adda and Mincio rice is but a secondary crop, reassuming importance in the Provinces of Verona, Mantua, and Bologna. In the last-mentioned, rice yields are the highest in Italy (averaging over 65 quintals per hectare, or about 130 bushels per acre). In Mantua much of the rice is transplanted in June on flooded fields where early wheat has been previously harvested, so that the total yearly output of grain averages 80 quintals per hectare (about 88 short tons per acre), at times reaching 100 quintals (11 short tons).

Corn and wheat are also among the important crops of this area. In the central section they predominate over rice.

The raising of dairy cattle of the Brown Swiss and Holstein breeds is common throughout the plain and assumes special importance in Lombardy. On many farms as much as one head of adult cattle per acre is raised.

Intensive cattle raising is related to the importance of feed crops. First and foremost among them is the giant variety of *Trifolium repens* known as *ladino*, which follows wheat in rotation, occupying the ground for 3 or 4 years.[20] In addition, considerable acreage is devoted to mixed meadows, and the planting of cover crops is common practice.

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[19] See reference in footnote 14, p. 279.

[20] Ladino clover thrives even on poor soils and is considered with much interest in our Southern States (*2*).

Peculiar to the irrigated plain is the so-called "marcita," a permanently irrigated meadow, shaped like a ridge-type roof over which water flows gently the year round. In the winter the temperature of the flowing water (10°-15° C. or 50°-59° F.) is higher than that of the air, so that both permanence of snow and freezing of the ground are prevented. Thus fresh, succulent feed is made available as early as January or February. Labor inputs in the marcita are extremely high, averaging some 700 man-hours per acre. Water consumption averages 0.57 cubic foot per second per acre. A good marcita yields the equivalent of 20 metric tons of hay per hectare, or about 9 short tons per acre (*3*).

The Low-Irrigation Areas of the Po Valley

The section between the right bank of the Po River and the Apennines is characterized by clay soils and a low supply of water for irrigation. The right-side tributaries of the Po River are often waterless in the summer, for they are fed by winter snows rather than by glaciers. The Po River itself is the only source of irrigation water, which is exploited by a few gigantic projects in the Provinces of Modena and Reggio.

The pattern of land tenure is extremely varied, the size of holdings tending to increase from the west to the east. Share tenancy and sharecropping are the most common arrangements.

Alfalfa meadows in rotation occupy as much as one-half the land, and commercial crops, such as hemp, sugar beets, and tomatoes for canning, are far more important than wheat or corn. This area produces 90 percent of Italy's sugar and 70 percent of the hemp. Wine grapes are important in the Provinces of Modena and Reggio, whereas commercial orchards give Ravenna much of its wealth.

Livestock enterprises are also well developed. Careful selection has led to the establishment of improved native breeds of cattle, which are both good draft animals and, by Italian standards, well suited for the production of beef and veal.

Emilian dairy plants process much of Lombardy's milk and are the main centers of Italian cheese production (Parmesan cheese). Whey from cheese factories is used, together with corn, to fatten Yorkshire and Poland China pigs.

The Land-Reclamation Areas of the Adriatic Shore

Spreading fanwise along the Adriatic are some 2.5 million acres of low-lying areas, which require artificial drainage and dykes to prevent flooding from the higher rivers and the sea. Beginning in the early nineteenth century, land once covered with sandy dunes and pestilential swamps and marshes has been gradually reclaimed and now forms an area of efficient, progressive farming.[21]

Estates are large and feudallike. The landlord through paternalistic gestures controls all activities. Schools, churches, kindergartens, hospitals, and medical care are all on a farm basis in that they are located on the estate and supported by the landowners. Associations of occupiers, similar in function to our drainage districts, own the roads, the drainage works, and the pumping stations. The landlord will go very far in providing for the welfare of the laborers, but this is more *seigneurial largesse* than performance of a social duty.[22]

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[21] Immense, almost excessive, pride in their achievement and in those of their forebears is a typical mental trait of farmers in this area. Indicative of this attitude are the high-sounding inscriptions on the walls of pumping stations. For instance there appears at Chioggia "A Roman project, a Venetian achievement" and at Ongaro "Truly my forefathers and I imitated the work of the Almighty, for we too parted the waters and let the land be dry."

The labor force is comprised of laborers who are hired on a day basis for the cultivation of wheat and enter crop-sharing agreements for the intertilled crops. Less than half the laborers live on the farm. They rent dwellings from the landlord, cultivate 1 or 2 acres of land, and raise hogs and chickens on their own account. The remainder live in villages and commute daily to and from the farm.[23]

The variety of crops in this area is truly exceptional. Flax, hemp, sugar beets, barley, and tobacco are among the most common cash crops. Here and there, mint, castor beans, linseed, reed for cellulose, sorghum for sugar, broomcorn, and potatoes for starch become important farm enterprises. On the sandier dunes of the coastal fringe, vegetables and table grapes to the north and rice to the south become the main crops.

After the cash crops, wheat and legumes complete the rotation. Although alfalfa and white clover often cover one-fourth of the land, cattle breeding is little developed, and much of the hay is sold in the markets of the upper part of the Po Valley.

Central Italy

Most of the land in the hills and plains of Central Italy is held in large estates, relics of feudal domains. Each estate is subdivided into a number of operating units usually from 20 to 50 acres in size, equipped with dwellings, livestock shelters, silos, and other facilities needed for their operation. Each unit is entrusted to a farm family under share-tenancy agreements, mostly of the *métayage* type.[24] The expenditures and returns of the enterprise are shared equally by the landlord and the métayer, joint ownership obtainung for livestock and machinery. In many parts of Tuscany and Umbria, the land is organized in *Fattorie*, groups of 20 to 50 operating units, with joint facilities for the processing of crops, breeding stations, etc. The nature of the soil and the climate give extreme importance to soil conservation, which is achieved with contour plowing, terracing, and with oblique and zigzag ditches that give hillsides a most unique appearance (fig. 3).

Farm enterprises are a combination of field and arboreal crops as well as of extensive cattle raising. Field crops (corn and horse beans, followed by wheat and feed legumes) are grown "between rows of vines festooned from branch to branch of the willow [and maple] trees which act as their props, with fruit trees scattered about the fields and olive groves utilizing the otherwise barren hill-sides . . ."[25]

Feed crops include sulla, which thrives on heavy soils, and sainfoin, better suited to sand and limestone. Cover crops (turnips, vetch, horse beans, crimson clover) supply as much as one-fifth of the total feed requirements. Both olive trees and vineyards yield high-quality products. Wine production is especially important in Tuscany, where the famous Chianti is made from three different varieties of grapes,

[22] The best known of the Italian socialists, Giacomo Matteotti, was born and fought his political battles in this section.

[23] In some communes, the daily trip covers a distance of as much as 60 miles.

[24] The contract is one of ill-defined legal nature, with elements of partnership and rental. Italian laws deal with share tenancy in a special section of the Civil Code. Share tenancy is a from-year-to-year contract, terminable upon a 6 months' notice. In practice the contract lasts many years. Cases of share tenants occupying the same holdings for scores of generations have been frequently reported (*6* and *9*).

[25] See reference cited in footnote 14, p. 8.

Breeding of cattle for meat and draft is commonly practiced. Occasionally purebred Hereford bulls are used to obtain rapid-gain calves.

The coastal plains of Latium and Tuscany have been recently reclaimed in series of much-publicized projects. Reclamation was rather successful in Tuscany, but the famous Pontine Marshes project hardly justified the initial cost.[26]

Southern Italy and Sicily

The southern part of the peninsula and the Island of Sicily present a combination of intensively cultivated holdings along the coastal fringe and in suburban areas and of large grain-growing estates in the plateaus and tableland of the center.

In the intensive areas tree crops, such as the olive, almond, and carob bean, predominate throughout the South and citrus fruit in Calabria and Sicily. Fields are planted mostly in out-of-season vegetables and early potatoes. Hemp is grown near Naples, especially in the lower valley of the Volturno River, and tobacco is among the main crops of southern Apulia.[27]

The areas of extensive cultivation comprise large estates where durum wheat, barley, and oats are grown in rotation with pulses (horse beans, lentils, lupines) or alternate with the fallow. Large flocks of sheep roam pastures and fallow during the winter and migrate to the mountains in the spring. (See page 281.) Production methods on these estates, known as *latifundia*, vary from place to place. In Puglia and Calabria one frequently finds well-mechanized farms and efficient farming practices. In Lucania, central Campania, and much of Sicily the enterprises are technically primitive.

Organization and pattern of settlement are fairly uniform. Schmidt (*8*) states: "The absentee owners of these *latifundia* rent their land to usurious middlemen who sublet it from year to year in small plots to the cultivating peasants." The latter live not in the country but in villages and towns, around which they own and operate dwarf-sized holdings.

Here the worst features of part-time farming are evident. Peasant holdings are not sufficient to support the cultivator and his family. Additional land must be obtained from the operators of the latifundia against whom the "dwarf" holder has no bargaining power. In turn the small plot, bought with the savings of years, so attaches the peasant to the soil that he cannot seek employment elsewhere. The tragic paradox of the latifundistic areas is that landless peasants are shackled by the very ownership of too little land.

One must also recognize that mere redistribution of land would be of no avail, for the latifundia lack roads, water, dwellings, and drainage facilities. Judging from the experience of Istria, which closely resembles the South in soil and climate, peasant ownership per se would bring little relief to the disadvantaged rural groups.

Beginning in 1939, the "colonization" of the latifundia was initiated by transferring temporarily the possession of the estates to special agencies, which had the task of constructing houses, roads, and aqueducts and otherwise reorganizing the land into family-sized units. The program provided for changes in land utilization rather than for a true land reform.

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[26] The popular misconception of the Pontine reclamation as a great step toward self-sufficiency needs to be dispelled. The area mechanically drained was 17,000 hectares, or 42,000 acres (*11*); with one-fourth in wheat and with yields seldom surpassing 9 quintals per hectare (about 13.4 bushels per acre), the contribution to the national food supply is insignificant. As a resettlement project, the Pontine land could accommodate 40,000 people. The cost of the project surpassed 1 billion Lire (50 million pre-war dollars). There is hardly one section of Italy where this sum could not have been made to yield greater returns in terms of employment, gross produce, and over-all improvement of the agricultural economy.

[27] Among the products of this area that assume special importance for the United States are red and white squill and manna.

Sardinia

Rugged, mountainous Sardinia has been little affected by the changes that, during the last two centuries, have taken place in the rest of Italy. Poor soils and adverse climate are great obstacles to agricultural progress, not only in the highlands, but also in the small alluvial plains known as Campidani.

Intensive farming is confined to a few areas near the cities and a few sections of the coastal fringe. Here grapes, olives, and vegetables (especially artichokes) are the main crops. In the rest of the island, on the fragmented peasant holdings and on the few large estates, wheat and fallow dominate the farm economy. Conversely livestock enterprises are well developed, especially because of the large area occupied by communal pastures. The native breed of cattle is a fairly efficient one, and crosses with Brown Swiss animals have proved most successful. Large flocks of sheep, kept for wool and cheese production, roam the fallow in the winter and the mountains during the dry months.

THE SELF-SUFFICIENCY OF ITALY IN PEACE AND WAR

In the years immediately preceding the second World War, Italy had striven to achieve self-sufficiency both with regard to foodstuffs and raw materials. (See table 7.) In a few fields the efforts of the Government were crowned with a degree of success, but in others disunity of purpose, pressure of interest groups, and sheer lack of vital resources spelled failure for the autarchic drive.

A few examples will suffice to illustrate the limitations of Italy's autarchic drive and the general inadequacy of economic planning that obtained under the Fascist regime:

(1) Nearly one-half of the total wheat area of Italy is in the South. When wheat production is encouraged, as in the "Battle of Wheat," southern farmers tend to alternate wheat and fallow. Under the beans-wheat rotation, wheat production is lower, but total food output is greater than with fallow. Thus the Battle of Wheat conflicted with the over-all self-sufficiency goals.

(2) Long experience has proved that soybeans can well assume a role of the utmost importance in Italian agriculture. Yet, the Government yielded to olive-oil producers and never encouraged soybean production up to the outbreak of the war.

(3) In many cases, self-sufficiency merely meant decreased imports of finished or semifinished products and increased imports of raw materials. Thus for every 2 additional tons of beet sugar produced in Italy, 1 more ton of coal had to be imported. Expansion of agricultural production meant increased consumption of fertilizer. Rock phosphate and potash had to be imported, and many of the new plants for synthetic-nitrogen fertilizer used coke-oven gas (from imported coal).

Thus, an autarchic policy could well improve the trade balance, by reducing volume and value of imports, without freeing Italy from dependence upon foreign sources for the sinews of war. Similar considerations hold true when one analyzes only a phase of the autarchic policy, such as the food balance of Italy. In fact, the latter subject involves discussion of many related problems, such as the imports and exports of feedstuffs and other nonfood agricultural products. For the purpose of the present article, a brief analysis of the pre-war food situation of Italy and a consideration of the effects of the occupation of the peninsula upon the resources of the United Nations have been deemed sufficient.

TABLE 7.-*Production, trade, and utilization of foodstuffs in Italy, average 1933-34 to 1937-38*

COMMODITY	PRODUCTION	SEED	NET IMPORTS (+) OR NET EXPORTS (-)	DEDUCTION FOR FEED AND INDUSTRIAL PURPOSES	AVAILABLE FOR FOOD
	1,000 short tons	*1,000 short tons*	*1,000 short tons*	*1,000 short tons*	*1,000 short tons*
Wheat:					
Soft	6,092	550	+480	–	6,022
Durum	1,837	231	+9	–	1,615
Total	7,929	781	+489	–	[1]7,637
Corn	3,247	58	+173	1,856	1,506
Rice, rough	808	24	-212	4	568
Rye	165	17	+10	15	143
Barley	232	28	+66	218	52
Potatoes	3,074	466	-46	786	1,776
Horse beans	651	52	-16	309	274
Kidney beans	195	20	+41	–	216
Other dry legumes	154	15	+5	–	144
Tomatoes	1,012	–	-236	–	776
Sugar	327	–	+5	–	332
Vegetables[2]	1,854	–	-134	–	1,720
Fresh fruits	1,449	–	-154	–	1,295
Citrus fruits	843	–	-403	–	440
Nuts	679	–	-141	59	479
Dried fruits	91	–	+19	–	110
Vine[3]	967,126	–	-32,043	–	935,083
Beef and veal	363	–	+70	–	433
Pork	247	–	-6	–	241
Mutton, lamb, and goat meat	54	–	-.1	–	53.9
Horse meat	15	–	–	–	15
Meat offals	80	–	+4	–	84
Fowl and game	81	–	+2	–	83
Rabbits	50.5	–	-.3	–	50.2
Fish	196	–	+86	–	282
Eggs	342	–	+8	–	350
Cow's milk for direct consumption	382,228	–	-211	–	382,017
Cheese	256	–	-22	–	234
Butter	53	–	+1	–	54
Hog fat	166	–	+3	–	169
Olive oil[3]	[4]57,219	–	[4]-1,083	–	[4]56,136
Seed oil[5]	80.9	–	-.1	–	80.8
Coffee, raw	–	–	+42	–	42

[1] Estimates indicate that in 1936, 74 percent of the wheat consumed by humans was in the form of bread, 23.2 percent as alimentary pastes, and 2.8 percent as biscuits.

[2] Excludes vegetables not listed in the Italian Catasti and those consumed on farms. Total production in 1936-38 averaged 1,693,000 short tons and consumption 1,644,000 short tons.

[3] Excludes oil from olive cake (sansa). [4] 1,000 gallons. [5] Mostly from imported oilseeds.

Compiled (*1*) by the Office of Foreign Agricultural Relations.

In the thirties Italy had achieved a high degree of self-sufficiency in food by increasing agricultural production and, at the same time, decreasing consumption to levels that were rather low in comparison to most Northern European countries. Official sources indicate that, between 1926-29 and 1934-37, net imports decreased from 19 to 6 percent of the nation's calorie intake, and the daily per capita supply of calories decreased from 2,900 to less than 2,600 (excluding wine). Italy had a net export of rice, potatoes, cheese, wine, fruits, vegetables, and nuts and also of such raw materials as silk and hemp. Net imports of wheat, meat, and edible fats and oils amounted to 6, 7, and 15 percent, respectively, of the total supplies (*1*). Agricultural exports contributed over two-fifths of the total value of exported goods but, during the 1933-37 period, averaged only 81.7 percent of the agricultural imports.

During the war years, food production has been well maintained, with importation still supplementing domestic supplies of bread grains and meat. Exports of fruit and vegetables were sharply increased, but exports of rice and cheese showed a decline from pre-war years. Drastic limitations in food consumption were made necessary by the inability of the Government to collect and distribute equitably available supplies. Indications of flourishing black markets, widespread hoarding of foodstuffs, and illegal consumption on the part of producers are plenteous. Low rations and striking inequalities have gone a long way in sapping Italian morale.

One does not hesitate to rank reorganization and control of distribution among the major tasks facing the United Nations in Italy. Food shortages in urban centers accruing from peasant hoarding, black-market activities, and disrupted transportation may well make it necessary to effect considerable food shipments if the consumption levels of distressed areas are to be materially improved.

The occupation of one part of the country by the Allies and of another part by the Germans, as well as continuation of military operations on the peninsula, no doubt tend to complicate the food problem. The islands and the southern and central parts of Italy were on a deficit basis for staples, while yielding surpluses of fruits and vegetables. Thus, though often considered as exporting areas for agricultural products, they may well need considerable imports of grains.

Once a degree of order is restored and provided that ground and aerial fighting have not wrought too much damage on the Italian agricultural economy, Italy as a whole need not constitute a significant drain upon the resources of the United Nations.

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